

We claim:

1. A method for enhanced uplink data transmission, comprising:

independently generating a transport channel for each
transmission mode, each transport channel having an associated

5 transmission time interval (TTI);

multiplexing the generated transport channels on a selected TTI
basis to form a composite transport channel, the selected TTI being
selected from one of the TTIs associated with the independently
generated transport channels; and

10 mapping the composite transport channel onto a physical
channel.

2. The method of claim 1, wherein the selected TTI is a minimum of
the TTIs associated with the independently generated transport

15 channels.

3. The method of claim 1, wherein the independently generating step
generates first and second transport channels having first and second
TTIs, and the second TTI is a multiple of the first TTI.

20

4. The method of claim 3, wherein the transmission mode associated
with the first transport channel is a scheduled transmission mode and
the transmission mode associated with the second transport channel
is a autonomous transmission mode.

25

5. The method of claim 4, wherein the first TTI is 2ms and the second TTI is 10ms.
6. The method of claim 1, wherein the generating step independently
5 generates transport channels for more than one transmission mode.
7. The method of claim 6, wherein the TTI of each transmission mode is one of a sub-multiple and multiple of 10 ms.
- 10 8. The method of claim 1, wherein the independently generating step generates first and second transport channels having first and second TTIs, the transmission mode associated with the first transport channel is a scheduled transmission mode and the transmission mode associated with the second transport channel is a autonomous
15 transmission mode.
9. The method of claim 6, wherein the first TTI is 2ms and the second TTI is 10ms.
- 20 10. The method of claim 1, wherein the mapping step maps the composite transport channel onto the physical channel on the selected TTI basis.
11. An apparatus for enhanced uplink data transmission, comprising:

at least two control units each independently generating a transport channel for a different transmission mode, and each transport channel having an associated transmission time interval (TTI);

5 a transport channel multiplexer multiplexing the generated transport channels on a selected TTI basis to form a composite transport channel, the selected TTI being selected from one of the TTIs associated with the independently generated transport channels; and
a mapping unit mapping the composite transport channel onto
10 a physical channel.

12. A method of wireless uplink communication comprising:
mapping at least two transport channels within a physical
channel.

15

13. The method of Claim 12, wherein each of the transport channels has a distinct transmission time interval ("TTI") associated thereto.

14. The method of Claim 12, wherein the two transport channels
20 are generated for each transmission mode.

15. The method of Claim 12, comprising:
multiplexing the two transport channels to form a composite
transport channel.

25

